Inspection Report For Well: UT20736 - 04540

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: 10/12/2013
Others: Ajayi, Christopher — Time: 2:06 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevenson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 20-14		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 2/6/2007		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SESW S20 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1545 /
Last MIT:	Pass 12/16/2011	***Annulus Pressure From Last MIT:***	1010

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)
☐ Construction / Workover ☐ Response to Complaint ☐ Other
☐ Plugging ☒ Routine
☐ Post-Closure ☐ Witness MIT

ICIS Entered
Date 12/30/13
Initials DD

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure: U: 762 / L: ____ psig	Gauge Range: scada psig	Gauge Owner:	☐ EPA ☒ Operator
Annulus Gauge:	☒ Yes ☐ No	Pressure: 0 psig	Gauge Range: opened psig	Gauge Owner:	☒ EPA ☐ Operator
Bradenhead Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator
Pump Gauge:	☐ Yes ☐ No	Pressure: ____ psig	Gauge Range: ____ psig	Gauge Owner:	☐ EPA ☐ Operator

Operating Status: (Select One)
☐ Active ☒ Not Injecting ☐ Plugged and Abandoned
☐ Being Reworked ☐ Production ☐ Under Construction

U2 Entered
Date 12/17/13
Initial SR

See page 2 for photos, comments, and site conditions.

GREEN	BLUE	CBI
	1	

Inspection Report For Well: UT20736 - 04540 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating, Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 11/30/2014

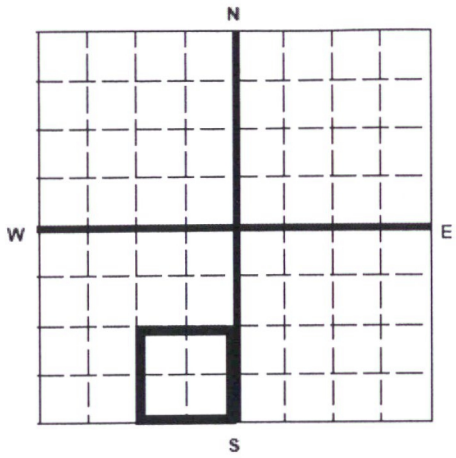
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT20736-04540

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 20 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 885 ft. frm (N/S) S Line of quarter section
and 2000 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 4/4/17
Initial JS

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 20-14

GREEN BLUE CBI
TAB 2

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	153	153	0		0	0
February	16	164	168	0		0	0
March	16	168	171	0		0	0
April	16	167	167	0		0	0
May	16	166	166	0		0	0
June	16	165	169	0		0	0
July	16	164	164	0		0	0
August	16	161	163	0		0	0
September	16	157	159	0		0	0
October	16	152	154	0		0	0
November	16	147	149	0		0	0
December	16	142	144	0		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

EPA Form 7520-11 (Rev. 12-11)

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Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 20-14 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345330**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/25/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0037
pH:	8.40
Calculated TDS (mg/L):	9249.17
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	20.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3113.95	Chloride (Cl):	3500.00
Potassium (K):	27.24	Sulfate (SO_4):	60.00
Magnesium (Mg):	13.21	Bicarbonate (HCO_3):	2440.00
Calcium (Ca):	30.03	Carbonate (CO_3):	
Strontium (Sr):	5.18	Hydroxide(HO):	
Barium (Ba):	5.90	Acetic Acid (CH_3COO)	
Iron (Fe):	24.59	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	4.39	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.05	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.26	Bromine (Br):	
Aluminum (Al):	0.19	Silica (SiO_2):	24.37
Lithium (Li):	3.08	Calcium Carbonate ($CaCO_3$):	
Boron (B):	4.85	Phosphates (PO_4):	7.91
Silicon (Si):	11.39	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	1.51	24.95	0.88	3.02	4.72	13.56	3.58	17.88	0.00	0.00	0.00	0.00	0.00	0.00	11.45	2.29
149.00	267.00	1.57	25.12	0.79	2.90	4.66	13.56	3.67	17.88	0.00	0.00	0.00	0.00	0.00	0.00	11.18	2.29
168.00	483.00	1.64	25.31	0.71	2.79	4.63	13.56	3.77	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.96	2.29
187.00	700.00	1.72	25.50	0.65	2.69	4.63	13.56	3.86	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.77	2.29
206.00	917.00	1.81	25.66	0.61	2.61	4.64	13.56	3.95	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.60	2.29
224.00	1133.00	1.91	25.80	0.59	2.56	4.68	13.56	4.03	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.45	2.29
243.00	1350.00	2.02	25.92	0.57	2.53	4.73	13.56	4.11	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.33	2.29
262.00	1567.00	2.13	26.01	0.57	2.52	4.80	13.56	4.18	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.22	2.29
281.00	1783.00	2.25	26.08	0.57	2.53	4.88	13.57	4.25	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.13	2.29
300.00	2000.00	2.37	26.13	0.59	2.56	4.97	13.57	4.31	17.88	0.00	0.00	0.00	0.00	0.00	0.00	10.05	2.29

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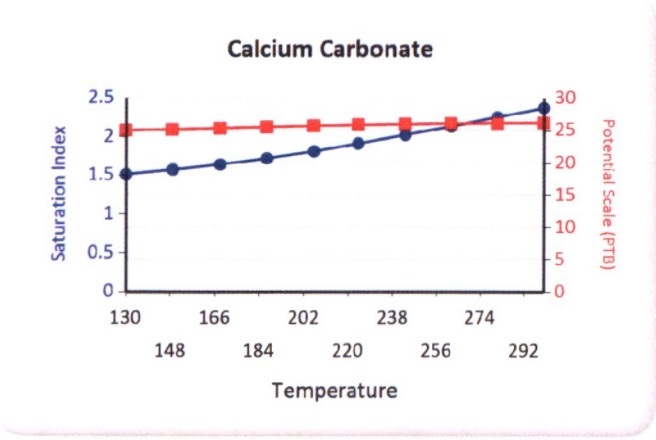
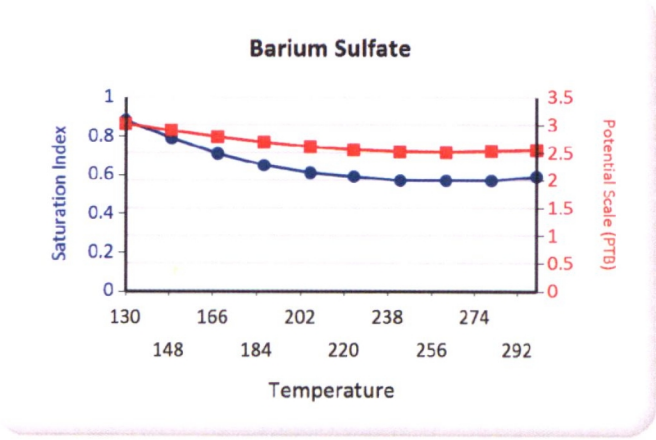
Water Analysis Report

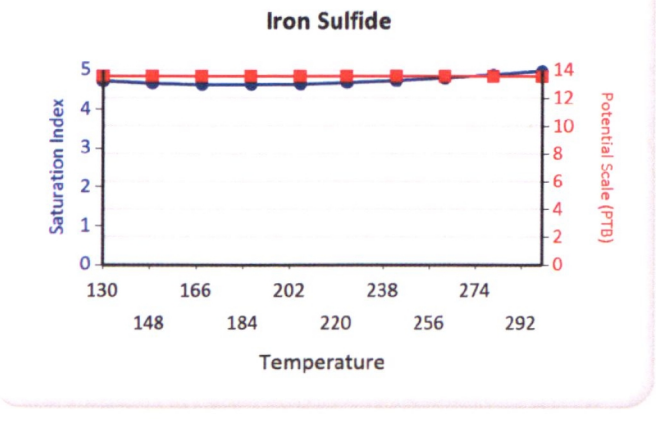
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.41	2.94	11.22	0.02	3.48	19.92	1.84	16.15	12.41	19.12
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61	2.94	10.78	0.02	4.21	22.17	2.23	18.96	12.85	19.12
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.81	2.95	10.39	0.02	4.98	23.95	2.66	22.06	13.35	19.12
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.98	2.95	10.05	0.02	5.74	25.06	3.09	24.89	13.88	19.12
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.14	2.95	9.75	0.02	6.50	25.69	3.52	27.31	14.41	19.12
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	3.28	2.95	9.48	0.02	7.24	26.03	3.95	29.24	14.94	19.12
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	3.41	2.95	9.24	0.02	7.97	26.20	4.37	30.65	15.48	19.12
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	3.52	2.95	9.03	0.02	8.67	26.29	4.79	31.58	16.01	19.12
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	3.62	2.95	8.84	0.02	9.35	26.34	5.19	32.16	16.53	19.12
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70	2.95	8.68	0.02	10.01	26.36	5.59	32.50	17.04	19.12

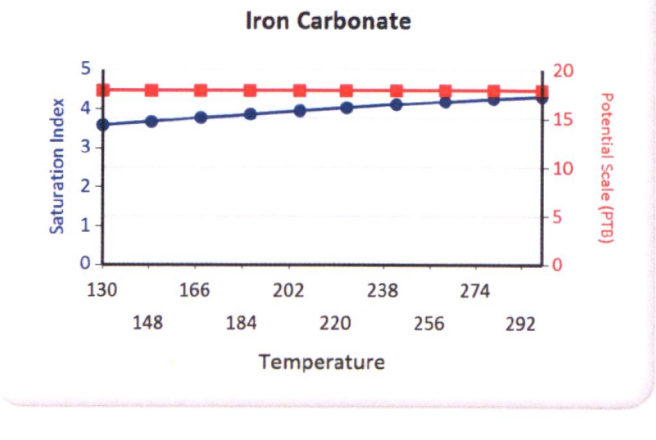
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









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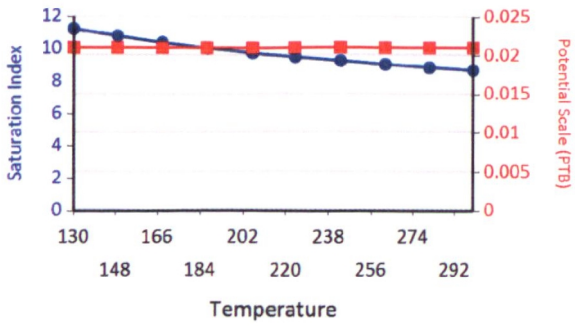
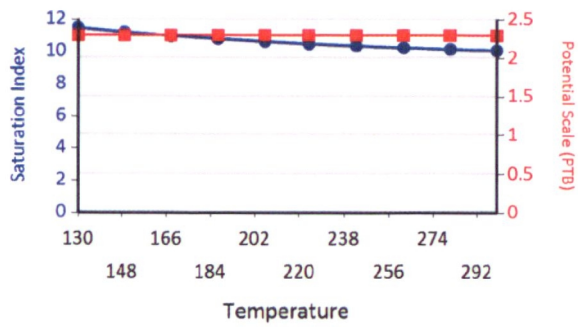
Water Analysis Report

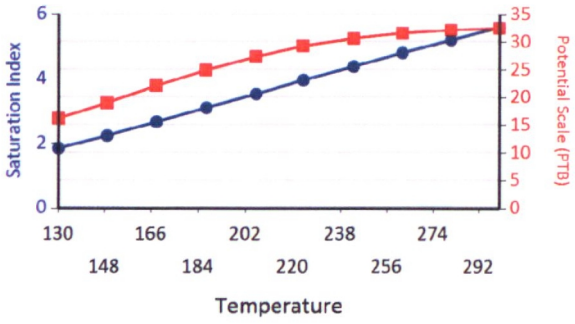
Lead Sulfide



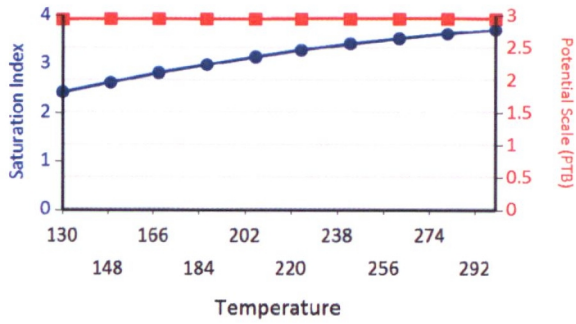
Zinc Sulfide



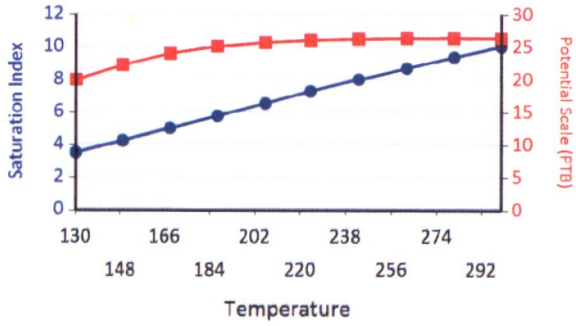
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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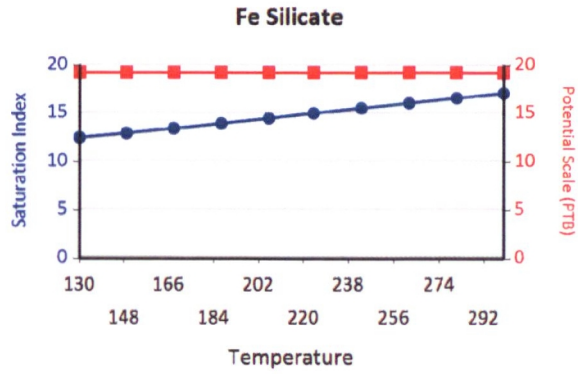


PETROGLYPH EXECUTIVE OFFICES

RECEIVED
JAN 11 2017
Office of Enforcement, Compliance
and Environmental Justice (Water)

January 4, 2017

Gary Wang or Don Breffle
Underground Injection Control Enforcement
U.S. Environmental Protection Agency
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: 5-year Mechanical Integrity Tests
(Ute Tribal 07-15, 15-12, 19-16, 20-14, 29-04)

Mr. Wang/ Mr. Breffle:

Please find enclosed 5-year Mechanical Integrity Tests for the following wells:

- Ute Tribal 07-15 UT20736-07414
- Ute Tribal 15-12 UT20736-04640
- Ute Tribal 19-16 UT20736-07113
- Ute Tribal 20-14 UT20736-04540
- Ute Tribal 29-04 UT20736-06482

If any questions, please reach me at (208) 685-9711.

Best Regards,

Nicole Colby
Manager, Land & Regulatory Compliance

U2 Entered
Date 1/11/17
Initial DB

TAB	GREEN	BLUE	CBI
		2	

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 12 / 27 / 16

Test conducted by: CHAD STEVENSON

Others present: _____

Well Name: 20-14 Type: ER SWD **Status:** AC TA UC

Field: ANTELOPE CREEK

Location: 20-14 Sec: ___ T ___ N / S R ___ E / W **County:** DUCHESNE **State:** UT

Operator: PETROGLYPH ENERGY

Last MIT: / / **Maximum Allowable Pressure:** _____ **PSIG**

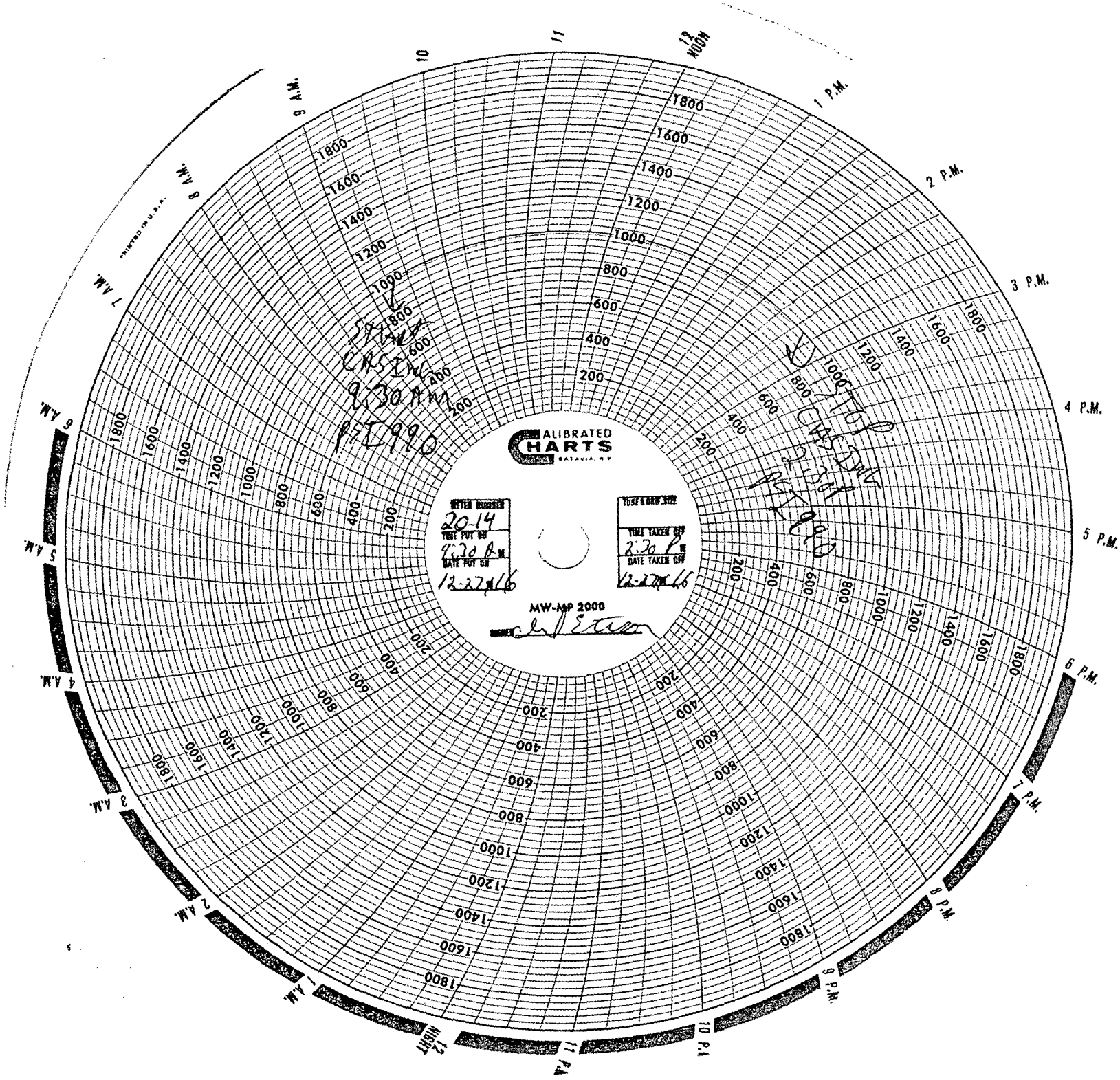
Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: _____ **bpd**

Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING		**PRESSURE RECORD**	
Initial Pressure	140 psig	psig	psig
End of test pressure	140 psig	psig	psig
CASING / TUBING ANNULUS		**PRESSURE RECORD**	
0 minutes	990 psig	psig	psig
5 minutes	990 psig	psig	psig
10 minutes	990 psig	psig	psig
15 minutes	990 psig	psig	psig
20 minutes	990 psig	psig	psig
25 minutes	990 psig	psig	psig
30 minutes	990 psig	psig	psig
5 Hours ~~minutes~~	990 psig	psig	psig
_____ minutes	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, _____ **psig.**


CALIBRATED
CHARTS
BATAVIA, N.Y.
METER NUMBER
20-14
TIME PUT ON
9:30 A.M.
DATE PUT ON
12-27-16
TIME TAKEN OFF
2:30 P.M.
DATE TAKEN OFF
12-27-16
MW-MP 2000
PRINTED IN U.S.A.
12 NOON
1 P.M.
2 P.M.
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4 P.M.
5 P.M.
6 P.M.
7 P.M.
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9 P.M.
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12 NIGHT
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3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10
11

OMB No. 2040-0042 Approval Expires 11/30/2014

EPA

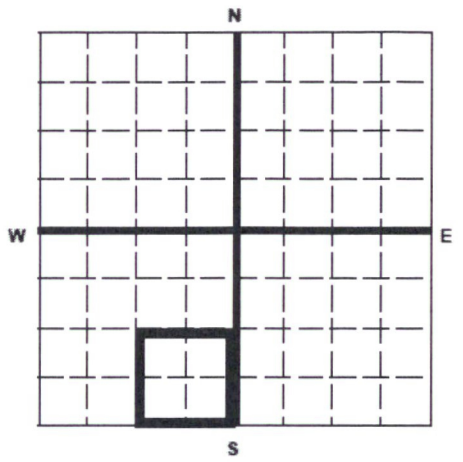
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State Utah | **County** Duchesne | **Permit Number** UT2736-~~04434~~ 04540

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 20 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 885 ft. frm (N/S) S Line of quarter section
and 2000 ft. from (E/W) W Line of quarter section. I/2 Entered

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Date 3/2/16
Initial DB

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 20-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	441	450	0		0	0
February	15	424	425	0		0	0
March	15	414	417	0		0	0
April	15	400	408	0		0	0
May	15	386	391	0		0	0
June	15	369	377	0		0	0
July	15	353	362	0		0	0
August	15	340	345	0		0	0
September	15	326	333	0		0	0
October	15	313	317	0		0	0
November	15	300	304	0		0	0
December	15	272	291	0		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

EPA Form 7520-11 (Rev. 12-11)

GREEN BLUE CBL
TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 20-14 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327683**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	**1/13/2016**
System Temperature 1 (°F):	**60**
System Pressure 1 (psig):	**2000**
System Temperature 2 (°F):	**180**
System Pressure 2 (psig):	**50**
Calculated Density (g/ml):	**1.0008**
pH:	**10.00**
Calculated TDS (mg/L):	**5305.59**
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	**0.00**
H_2S in Gas (%):	
H2S in Water (mg/L):	**0.00**
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	**0.00**
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	**1916.72**	Chloride (Cl):	**2500.00**
Potassium (K):	**9.84**	Sulfate (SO_4):	**3.00**
Magnesium (Mg):	**1.89**	Bicarbonate (HCO_3):	**854.00**
Calcium (Ca):	**13.31**	Carbonate (CO_3):	
Strontium (Sr):	**0.64**	Acetic Acid (CH_3COO)	
Barium (Ba):	**2.11**	Propionic Acid (C_2H_5COO)	
Iron (Fe):	**1.86**	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	**0.40**	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	**0.44**	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	**0.05**	Silica (SiO_2):	**1.33**
Aluminum (Al):	**0.18**	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	**1.34**	Phosphates (PO_4):	**12.69**
Boron (B):	**0.37**	Oxygen (O_2):	
Silicon (Si):	**0.62**		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	**PSI**	**SI**	**PTB**	SI	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**	**SI**	**PTB**
180.00	50.00	2.03	11.54	0.00	0.00	0.00	0.00	3.06	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	1.98	11.52	0.00	0.00	0.00	0.00	2.98	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	1.92	11.50	0.00	0.00	0.00	0.00	2.90	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	1.86	11.48	0.00	0.00	0.00	0.00	2.82	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	1.81	11.45	0.00	0.00	0.00	0.00	2.74	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	1.76	11.43	0.00	0.00	0.00	0.00	2.65	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	1.71	11.41	0.00	0.00	0.00	0.00	2.56	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	1.66	11.38	0.00	0.00	0.00	0.00	2.47	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	1.62	11.35	0.00	0.00	0.00	0.00	2.39	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	1.59	11.32	0.00	0.00	0.00	0.00	2.30	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
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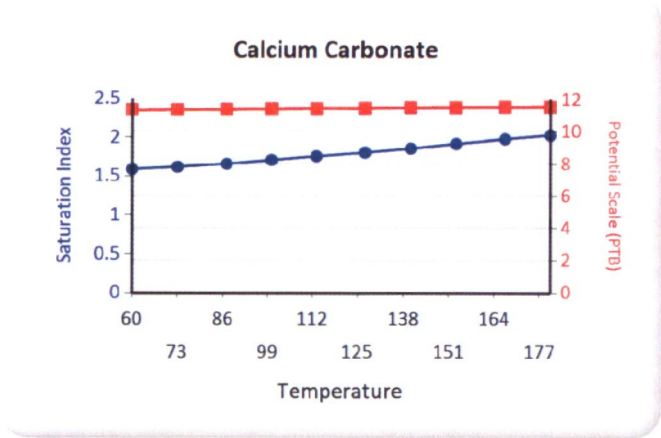
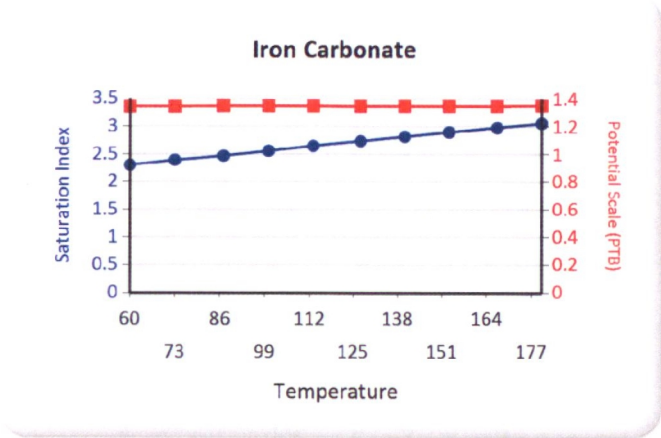
Water Analysis Report

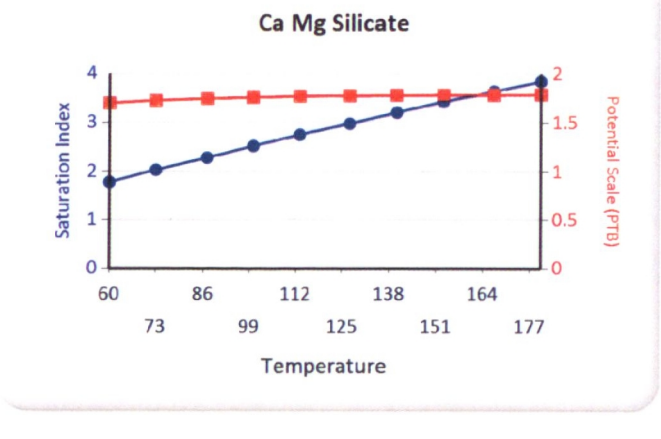
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.61	0.27	0.00	0.00	7.90	3.45	3.84	1.79	14.27	1.45
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.49	0.27	0.00	0.00	7.53	3.45	3.64	1.79	14.06	1.45
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	0.27	0.00	0.00	7.14	3.44	3.43	1.79	13.84	1.45
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.27	0.00	0.00	6.73	3.43	3.21	1.78	13.61	1.45
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.27	0.00	0.00	6.30	3.43	2.98	1.78	13.37	1.45
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.27	0.00	0.00	5.85	3.41	2.75	1.77	13.12	1.45
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	0.26	0.00	0.00	5.38	3.39	2.52	1.76	12.86	1.45
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.26	0.00	0.00	4.89	3.35	2.28	1.75	12.60	1.45
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.26	0.00	0.00	4.38	3.29	2.03	1.73	12.32	1.45
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	1.05	0.25	0.00	0.00	3.86	3.21	1.78	1.70	12.05	1.45

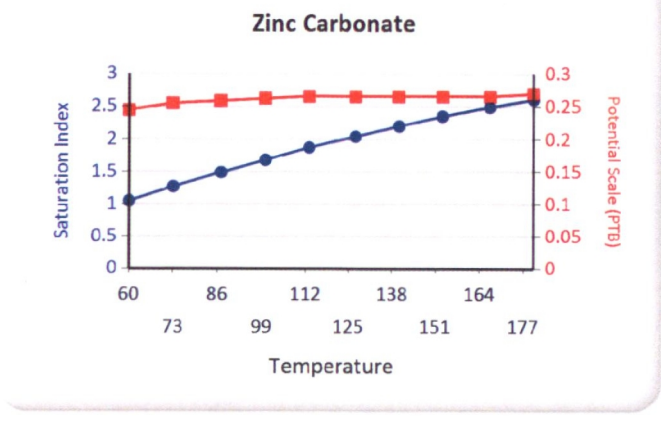
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









Multi-Chem Analytical Laboratory
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Vernal, UT 84078

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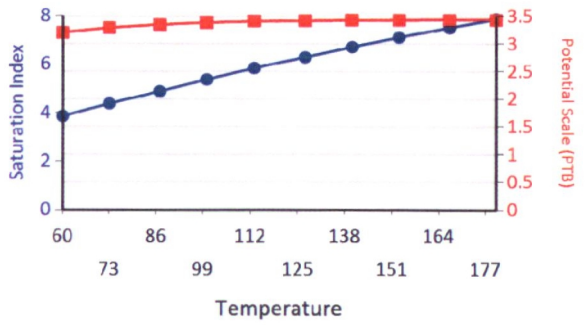
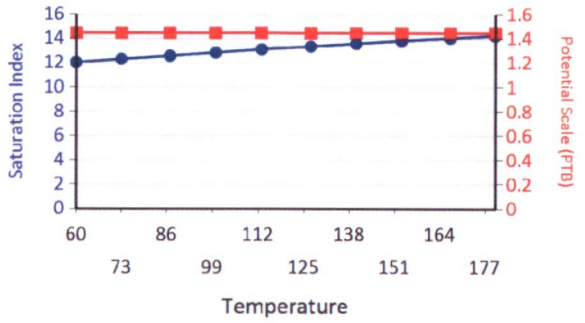
Water Analysis Report

Mg Silicate



Fe Silicate



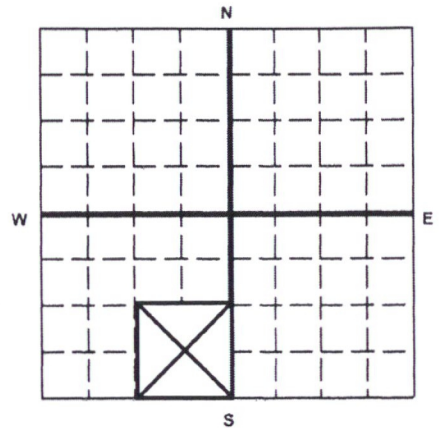
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

EPA ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT20736-04540

Surface Location Description

___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 20 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 885 ft. frm (N/S) S Line of quarter section and 2000 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 20-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	686	741	0		0	0
February	14	630	717	0		0	0
March	14	651	683	0		0	0
April	14	572	629	0		0	0
May	14	696	1046	0		0	0
June	14	964	1012	0		0	0
July	14	858	906	0		0	0
August	14	775	800	0		0	0
September	14	666	730	0		0	0
October	14	631	626	4		0	0
November	14	547	564	0		0	0
December	14	485	513	0		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/30/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 20-14 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297507**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0029
pH:	7.90
Calculated TDS (mg/L):	8410.05
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	32.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2538.60	Chloride (Cl):	4000.00
Potassium (K):	39.16	Sulfate (SO_4):	232.00
Magnesium (Mg):	28.66	Bicarbonate (HCO_3):	1464.00
Calcium (Ca):	46.20	Carbonate (CO_3):	
Strontium (Sr):	5.29	Acetic Acid (CH_3COO)	
Barium (Ba):	6.09	Propionic Acid (C_2H_5COO)	
Iron (Fe):	15.60	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	12.85	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.14	Silica (SiO_2):	21.46

Notes:
B=5.52 Al=.1 Li=1.19

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.96	29.28	1.88	3.58	3.92	8.58	2.36	11.27	0.00	0.00	0.00	0.00	0.00	0.00	11.96	6.71
88.00	157.00	0.92	28.18	1.79	3.57	3.80	8.57	2.35	11.27	0.00	0.00	0.00	0.00	0.00	0.00	11.74	6.71
97.00	300.00	0.95	28.81	1.71	3.56	3.75	8.57	2.41	11.28	0.00	0.00	0.00	0.00	0.00	0.00	11.59	6.71
106.00	443.00	0.98	29.47	1.64	3.54	3.71	8.57	2.46	11.29	0.00	0.00	0.00	0.00	0.00	0.00	11.45	6.71
115.00	585.00	1.01	30.15	1.58	3.53	3.68	8.56	2.52	11.30	0.00	0.00	0.00	0.00	0.00	0.00	11.32	6.71
124.00	728.00	1.04	30.84	1.52	3.52	3.66	8.56	2.57	11.30	0.00	0.00	0.00	0.00	0.00	0.00	11.19	6.71
133.00	871.00	1.07	31.54	1.47	3.50	3.64	8.56	2.63	11.31	0.00	0.00	0.00	0.00	0.00	0.00	11.08	6.71
142.00	1014.00	1.11	32.23	1.42	3.49	3.63	8.56	2.68	11.31	0.00	0.00	0.00	0.00	0.00	0.00	10.97	6.71
151.00	1157.00	1.14	32.90	1.38	3.47	3.63	8.56	2.73	11.31	0.00	0.00	0.00	0.00	0.00	0.00	10.87	6.71
160.00	1300.00	1.18	33.56	1.34	3.46	3.63	8.56	2.78	11.32	0.00	0.00	0.00	0.00	0.00	0.00	10.78	6.71

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	8.33	0.00	0.00	0.00	0.00	0.00	0.00	6.71	11.78
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63	8.38	0.00	0.00	0.00	0.00	0.00	0.00	6.62	11.73
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	8.45	0.00	0.00	0.00	0.00	0.00	0.00	6.89	11.80
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	8.50	0.00	0.00	0.00	0.00	0.00	0.00	7.17	11.87
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	2.01	8.53	0.00	0.00	0.19	1.13	0.00	0.00	7.47	11.93
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	2.13	8.56	0.00	0.00	0.64	3.64	0.00	0.00	7.77	11.98
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.24	8.58	0.00	0.00	1.10	6.25	0.00	0.00	8.09	12.01
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	8.59	0.00	0.00	1.56	8.92	0.15	1.00	8.41	12.04
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.45	8.60	0.00	0.00	2.02	11.62	0.41	2.50	8.74	12.06
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.55	8.61	0.00	0.00	2.48	14.26	0.68	4.00	9.07	12.08

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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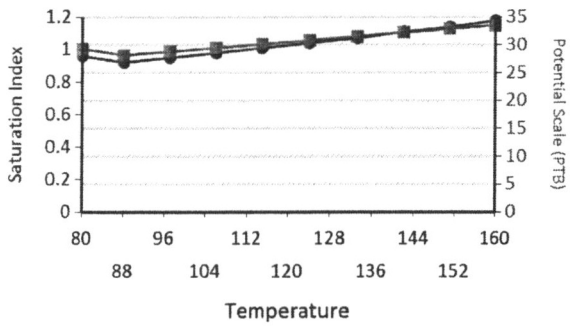
Water Analysis Report

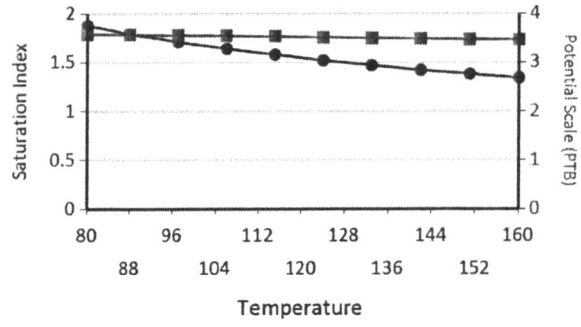
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

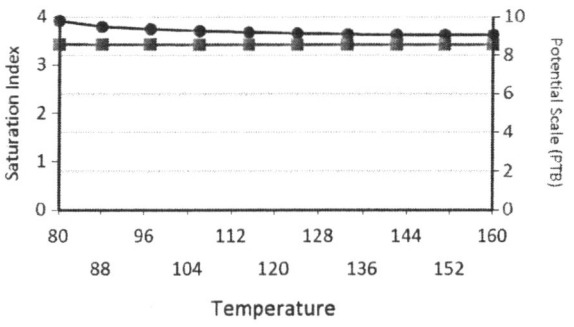
Calcium Carbonate



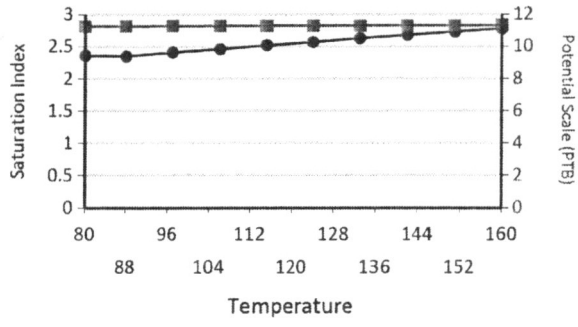
Barium Sulfate



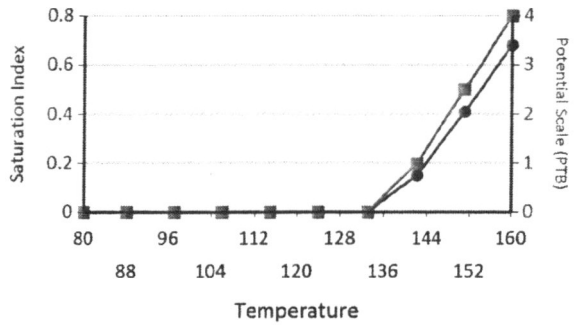
Iron Sulfide



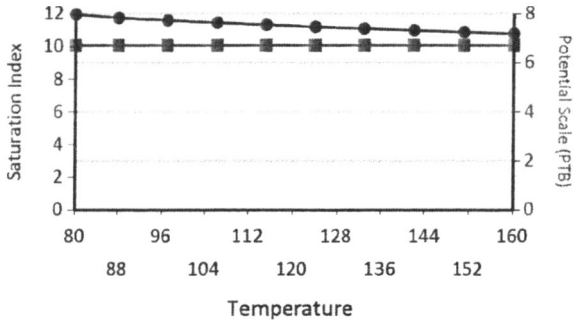
Iron Carbonate



Ca Mg Silicate



Zinc Sulfide



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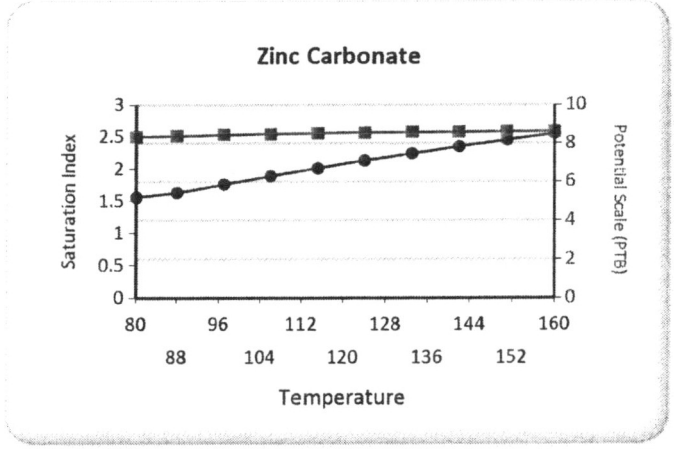
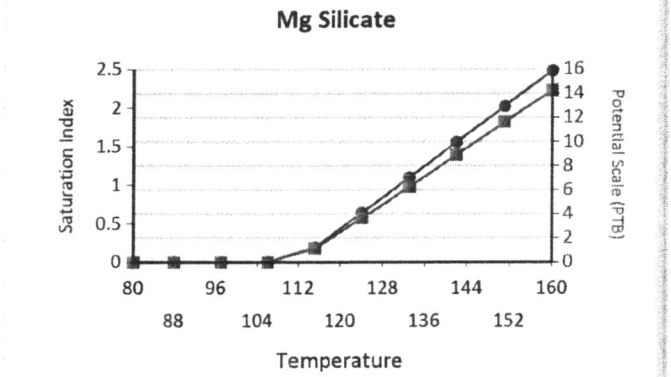
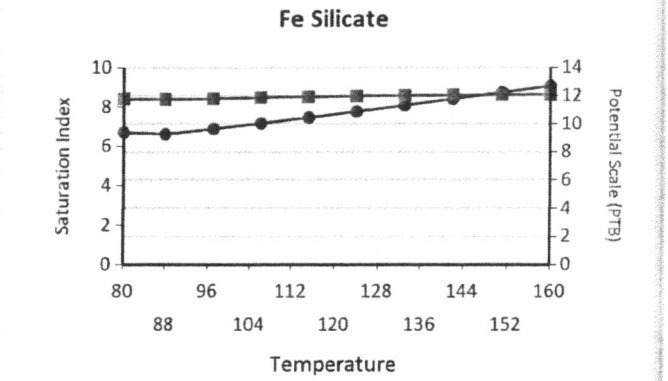






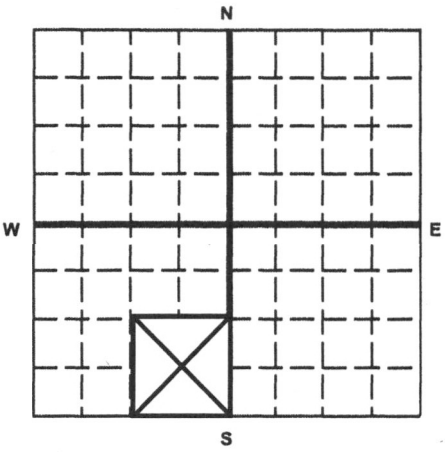
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT20736-04540

Surface Location Description

[ ] 1/4 of [ ] 1/4 of [SE] 1/4 of [SW] 1/4 of Section [20] Township [5S] Range [3W]

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location [885] ft. frm (N/S) [S] Line of quarter section and [2000] ft. from (E/W) [W] Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells [111]

Lease Name [Ute Indian Tribe] Well Number [UTE TRIBAL 20-14]

	INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January 13	1432	1460	451		0	0
February 13	1476	1486	670		0	0
March 13	1470	1472	650		0	0
April 13	1176	1506	352		0	0
May 13	1186	1390	0		0	0
June 13	1021	1060	0		0	0
July 13	957	983	0		0	0
August 13	902	915	0		0	0
September 13	852	871	0		0	0
October 13	812	826	0		0	0
November 13	782	790	0		0	0
December 13	758	767	0		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor	C Stevenson	2/11/2014

EPA Form 7520-11 (Rev. 12-08)

GREEN BLUE CBI
TAB 2

U2 Entered
Date 3/20/14
Initial JB

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 20-14 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-263013**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	0.999
pH:	8.90
Calculated TDS (mg/L):	2189.55
CO2 in Gas (%):	
Dissolved CO2 (mg/L)):	0.00
H2S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	755.24	Chloride (Cl):	1000.00
Potassium (K):	8.40	Sulfate (SO_4):	2.00
Magnesium (Mg):	7.00	Bicarbonate (HCO_3):	390.40
Calcium (Ca):	14.00	Carbonate (CO_3):	
Strontium (Sr):	0.70	Acetic Acid (CH_3COO)	
Barium (Ba):	1.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	7.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.50	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.08	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.23	Silica (SiO_2):	3.00

Notes:
B=.79 Al=.14 Li=.01

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.95	8.97	0.00	0.00	0.00	0.00	2.33	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.96	9.02	0.00	0.00	0.00	0.00	2.40	5.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.98	9.13	0.00	0.00	0.00	0.00	2.48	5.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.00	9.27	0.00	0.00	0.00	0.00	2.55	5.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.03	9.43	0.00	0.00	0.00	0.00	2.62	5.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.06	9.59	0.00	0.00	0.00	0.00	2.68	5.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.09	9.76	0.00	0.00	0.00	0.00	2.74	5.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.12	9.94	0.00	0.00	0.00	0.00	2.80	5.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.16	10.11	0.00	0.00	0.00	0.00	2.85	5.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.19	10.27	0.00	0.00	0.00	0.00	2.89	5.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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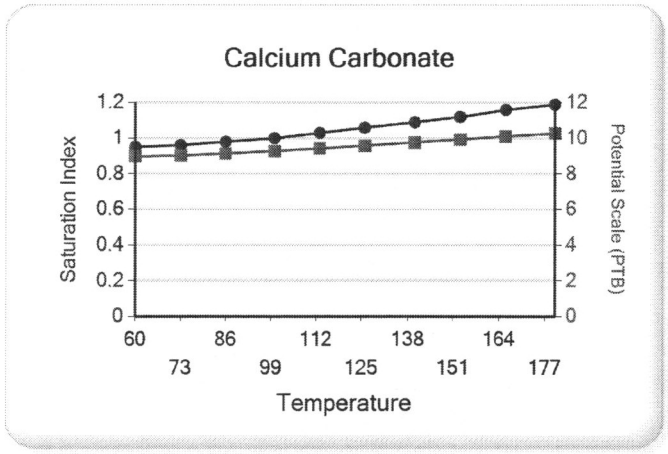
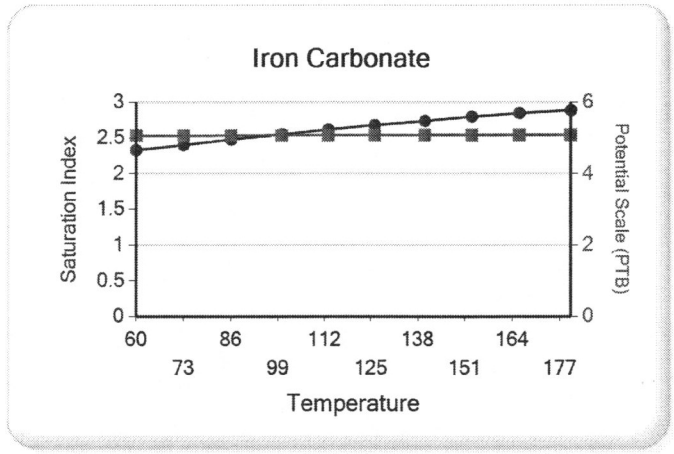
Water Analysis Report

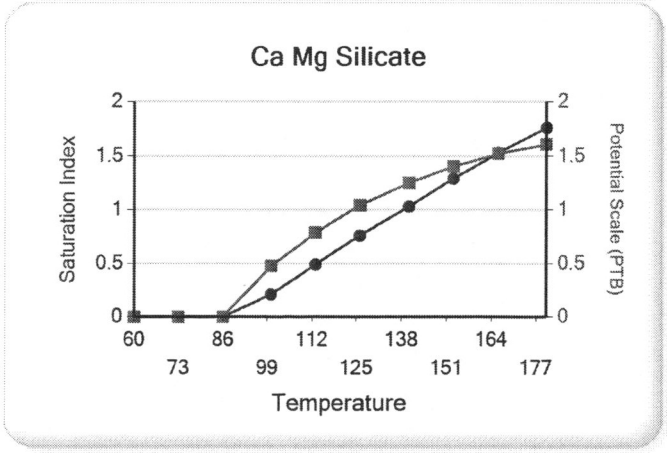
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.22	0.00	0.00	0.62	1.15	0.00	0.00	9.36	3.25
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.26	0.00	0.00	1.11	1.79	0.00	0.00	9.59	3.25
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.29	0.00	0.00	1.62	2.35	0.00	0.00	9.86	3.25
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.30	0.00	0.00	2.14	2.79	0.21	0.47	10.15	3.25
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.21	0.32	0.00	0.00	2.66	3.12	0.49	0.79	10.45	3.25
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	0.32	0.00	0.00	3.18	3.33	0.76	1.04	10.76	3.25
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	0.33	0.00	0.00	3.68	3.46	1.03	1.25	11.06	3.25
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.65	0.33	0.00	0.00	4.16	3.54	1.29	1.40	11.36	3.25
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	0.33	0.00	0.00	4.61	3.58	1.53	1.52	11.64	3.25
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.33	0.00	0.00	5.03	3.60	1.76	1.61	11.89	3.25

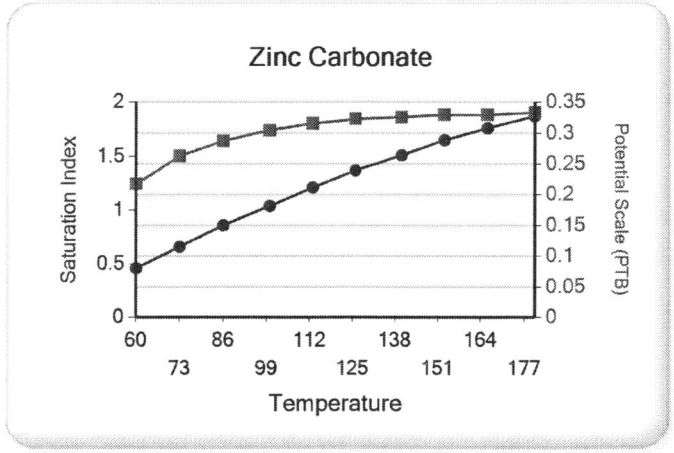
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Iron Carbonate Zinc Carbonate Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









Multi-Chem Analytical Laboratory
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Vernal, UT 84078

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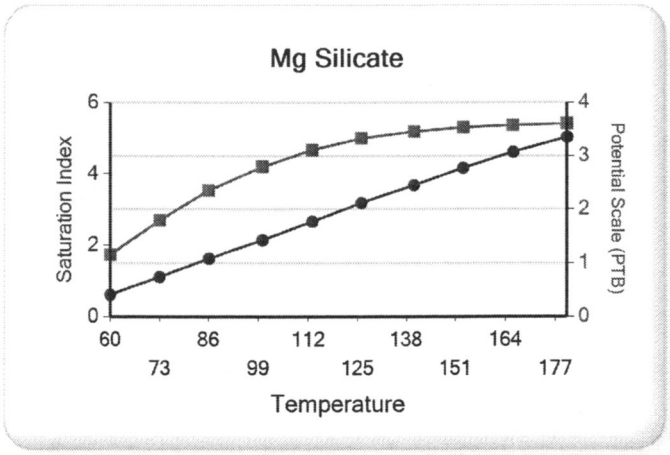
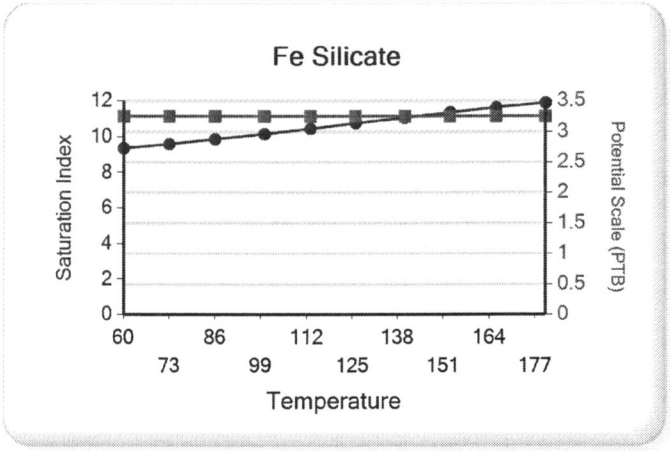
Water Analysis Report





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

APR 20 2007

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: Authorization to Inject
UIC Permit No. UT20736-00000
Well ID: UT20736-04540
Ute Tribal 20-14, Duchesne County, Utah

Dear Mr. Wall:

Thank you for submitting information pertaining to the newly completed Ute Tribal 20-14 enhanced recovery injection well to the Region 8 Ground Water Program office of the Environmental Protection Agency (EPA). The "Prior to Commencing Injection" requirements for the Ute Tribal 20-14 injection well required well owner and operator Petroglyph Energy, Inc. to submit the following information to the Director:

1. A successful mechanical integrity test (MIT) demonstrating Part I Internal MI,
2. Pore pressure calculation of the proposed injection zone, and
3. A completed EPA Form No. 7520-12.

All required information has been submitted, and has been reviewed and approved by the EPA. Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal 20-14 enhanced recovery injection well under the conditions of the Authorization for Additional Well and UIC Area Permit UT20736-00000 as modified.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Scan under
UT20736 - 04540
220 Authorization
to Inject - Final
4/20/2007

APR 20 2007

Ref: 8P-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

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UIC Permit No. UT20736-00000
Well ID: UT20736-04540
Ute Tribal 20-14, Duchesne County, Utah

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As of this approval, responsibility for permit compliance and enforcement is transferred to the Region 8 UIC Technical Enforcement Program office. Therefore, please direct all future notification, reporting, monitoring and compliance correspondence to the following address, referencing your well and UIC Permit number on all correspondence regarding this well.

Technical Enforcement Program - UIC
U.S. EPA Region 8, Mail Code 8ENF-UFO
1595 Wynkoop Street
Denver, CO 80202-1129

The Director has determined that the maximum allowable surface injection pressure (MAIP) for the Ute Tribal 20-14 is **1545** psig. Please be reminded that it is the responsibility of the owner/operator to be aware of, and to comply with, all conditions of Authorization for Additional Well UT20736-04540 and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

If you have any questions regarding this Authorization, please call Dan Jackson of my staff at (303) 312-6155. For questions regarding notification, testing, monitoring, reporting or other Permit requirements, the UIC Technical Enforcement Program may be reached by calling (800) 227-8917.

Sincerely,

Steven J. Pratt, P.E. (inactive)
Director, Ground Water Program

Cc: Mr. Kenneth Smith
Executive Vice President and Chief Operating Officer
Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Ronald Groves, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Irene Cuch, Councilwoman
Uintah & Ouray Business Committee
Ute Indian Tribe
P:O. Box 190
Fort Duchesne, UT 84026

Richard Jenks, Jr., Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Smiley Arrowchis, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Francis Poowegup, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Shawn Chapoose, Director
Land Use Department
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

BIA - Uintah & Ouray Indian
Agency
P.O. Box 130
Fort Duchesne, UT 84026

Lynn D. Becker
Director, Energy and Minerals
Department
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, UT 84026

Gil Hunt
Associate Director
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

Fluid Minerals Engineering Department
BLM - Vernal District
170 South 500 East
Vernal, UT 84078

bcc: Nathan Wiser, 8 ENF-UFO

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

APR 20 2007 E
8P-GW-UIC

Mr. Steve Wall
District Manager
Petroglyph Energy, Inc
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☒ Agent ☐ Addressee

B. Received by (Printed Name) Patti A Cox C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

RECEIVED
APR 25 2007
EPA Region 8
Ground Water Program

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7005 0390 0000 4848 0851

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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Restricted Delivery Fee (Endorsement Required)
Total Postage & F

Postmark Here

Sent To Mr. Steve Wall
Street, Apt. No.; or PO Box No. District Manager
City, State, ZIP+4 Petroglyph Energy, Inc
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

7005 0390 0000 4848 0851

PS Form 3800, June 2002 See Reverse for Instructions

Printed on Recycled Paper

UIC Program Action : Auth to Inject

Permit Number: UT20736-04540. **Well Name:** Ute Tribal 20-14.

Form or Non-Form **Operator:** Petroglyph.

		Mailcode	Initials	Date
Writer: DWJ.	phone: .	8P-W-GW	DWJ	3/27/07
UIC Review	❑ DWJ ❑ CT ❑ NW (8ENF-UFO)	8P-W-GW		
J Carnal, *Admin*	*Proof*	8P-W-GW	JC	3/29/07
S Pratt, Dir, GWP	❑ concur ❑ signature w/ change/w/ sign comments	8P-W-GW	AP	3/29/07
			AP	4/19/07
D Thomas, Dir, WP	❑ concur ❑ signature	8P-W		
M Brennan, *Admin*	*proof*	8-P		
S Tuber, ARA, OPRA	❑ signature	8-P		
J Carnal	Data Entry; date stamp & mail original letter & copy of docs to Addressee	8P-W-GW	JC	4/20/07
J Taylor	*send Public Notice*	8P-W-GW		
Carnal, *Admin*	*mail copies to CC's*	8P-W-GW		
Writer	*file documents*	8P-W-GW		

LEFT SIDE
- ➤ Concurrence Copy
- ➤ Request Letter & relevant information
- ➤

RIGHT SIDE
- ➤ Response Letter
- ➤
- ➤

COMMENTS:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8P-W-GW

CONCURRENCE COPY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Steve Wall, District Manager
Petroglyph Energy, Inc.
4116 West 3000 So. Ioka Lane
Roosevelt, UT 84066

RE: Authorization to Inject
UIC Permit No. UT20736-00000
Well ID: UT20736-04540
Ute Tribal 20-14, Duchesne County, Utah

Dear Mr. Wall:

Thank you for submitting information pertaining to the newly ~~constructed or~~ converted Ute Tribal 20-14 enhanced recovery injection well to the Region 8 Ground Water Program office of the Environmental Protection Agency (EPA). The "Prior To Commencing Injection" requirements for the Ute Tribal 20-14 injection well required well owner and operator Petroglyph Energy, Inc. to submit the following information to the Director:

(or could say completed - your choice) AP

1. A successful mechanical integrity test (MIT) demonstrating Part I Internal MI,
2. Pore pressure calculation of the proposed injection zone, and
3. completed EPA Form No. 7520-12.

All required information has been submitted, and has been reviewed and approved by the EPA. Therefore, effective upon your receipt of this letter, Administrative approval hereby is granted for injection into the Ute Tribal 20-14 enhanced recovery injection well under the conditions of the Authorization for Additional Well and UIC Area Permit UT20736-00000 as modified.

8P-W-GW [illegible] 3/27/07

8P-W-GW
LPratt 4/19/07
w/ red change
w/ signature corrections

As of this approval, responsibility for permit compliance and enforcement is transferred to the Region 8 UIC Technical Enforcement Program office. Therefore, please direct all future notification, reporting, monitoring and compliance correspondence to the following address, referencing your well and UIC Permit number on all correspondence regarding this well.

Technical Enforcement Program - UIC
U.S. EPA Region 8, Mail Code 8ENF-UFO
1595 Wynkoop Street
Denver, CO 80202-1129

The Director has determined that the maximum allowable surface injection pressure (MAIP) for the Ute Tribal 20-14 is **1545** psig. Please be reminded that it is the responsibility of the owner/operator to be aware of, and to comply with, all conditions of Authorization for Additional Well UT20736-04540 and EPA UIC Area Permit UT20736-00000 and relevant modifications as issued.

If you have any questions regarding this Authorization, please call Dan Jackson of my staff at (303) 312-6155. For questions regarding notification, testing, monitoring, reporting or other Permit requirements, the UIC Technical Enforcement Program may be reached by calling (800) 227-8917.

Sincerely,

Steven S. Pratt
Director
Ground Water Program

Cc: Mr. Kenneth Smith
Executive Vice President and Chief Operating Officer
Petroglyph Energy, Inc.
555 S. Cole Blvd
Boise, ID 83709

Maxine Natchees, Chairperson
Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Ronald Groves, Councilman
Uintah & Ouray Business Committee
Ute Indian Tribe
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Richard Jenks, Jr., Councilman
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Smiley Arrowchis, Councilman
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Uintah & Ouray Business Committee
Ute Indian Tribe
P.O. Box 190
Fort Duchesne, UT 84026

Shawn Chapoose, Director
Land Use Department
Ute Indian Tribe
P.O. Box 460
Fort Duchesne, UT 84026

BIA - Uintah & Ouray Indian
Agency
P.O. Box 130
Fort Duchesne, UT 84026

Lynn D. Becker
Director, Energy and Minerals
Department
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, UT 84026

Gil Hunt
Associate Director
Utah Division of Oil, Gas, and Mining
1594 West North Temple - Suite 1220
Salt Lake City, UT 84114-5801

Fluid Minerals Engineering Department
BLM - Vernal District
170 South 500 East
Vernal, UT 84078

bcc: Nathan Wiser, 8 ENF-UFO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

FINAL MAJOR AREA PERMIT MODIFICATIONS

EPA Area Permit No. UT2736-00000

Petroglyph Operating Company, Inc.

Antelope Creek Waterflood
Antelope Creek Field
Duchesne County, Utah

Pursuant to Part III, Section B. 1. of the above-referenced Underground Injection Control (UIC) permit, modifications to subject Area Permit are hereby being established. The purpose of these modifications, of the Permit PARTS I and II, is to **expand the Antelope Creek Waterflood Area to the West and North and, at the same time, change title and add a word.** Incidental permit modifications of PART III are being made for the purpose of **correcting nomenclature errors.**

Modifications of the original versions of **PART I**, of **Part II**, Sections A.1.(a); B; C.1; and E.2., and **correction of nomenclature in Part III** are as follows:

MODIFICATION #1 [PART I] - (Original Permit version):

PART I. AUTHORIZATION TO CONVERT/OR CONSTRUCT AND INJECT

"Injection activities shall not commence until the operator has fulfilled all applicable conditions of this permit and has received written authorization from the Director."

Is Modified to read:

PART I. AUTHORIZATION TO CONVERT/OR CONSTRUCT AND OPERATE

MODIFICATION #2 [PART I] - (Original Permit version):

"Pursuant to ... is hereby authorized, under this area permit, to convert four (4) existing oil production wells to Class II enhanced recovery injection wells located within the proposed Antelope Creek Field, Duchesne County, Utah. Each of these proposed wells are located within the permitted area which is defined as follows:"

Township 5 South, Range 3 West, Duchesne County, Utah
Sections 2, 3, 4, 5, 6 (SE/4 of SE/4), 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 28, 30, 31, 32, and 33.

Is Modified to read:

"Pursuant to ... is hereby authorized, under this expanded area permit (as modified), to initially convert **four (4) additional** existing oil production wells to Class II enhanced recovery injection wells located within the Antelope Creek Field, Duchesne County, Utah. Each of these proposed wells are located within the **new expansion of the now** permitted area which is defined as follows:"

Township 4 South, Range 3 West, Duchesne County, Utah

Section 20: NE/NE, SE/NE, NE/SE,
Section 21: All Section 22: All, Section 25: E/2, NW, S/2SW, NWSW, Section 26: All, Section 27: All,
Section 28: All, Section 29: SENE, E/2SE, SWSE, SESW,
Section 31: W/2, NWNE, S/2SE, NESE, Section 32: E/2, SW, S/2NW,NENW, Section 33: All, Section 34: All,
Section 35: All, Section 36: All

Township 4 South, Range 4 West, Duchesne County, Utah

Section 25: S/2,

Township 5 South, Range 3 West, Duchesne County, Utah

Sections 2, 3, 4, 5, Section 6: SE/4SE/4, Sections: 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, and 33: All,

Township 5 South, Range 4 West, Duchesne County, Utah

Section 1: All, Section 12: All, Section 36: All.

MODIFICATION #3 [PART I] - (Original Permit version):

"Injection will be for the purpose of enhanced recovery ... and initially utilizing the following currently existing production wells located in T5S-R3W:"

WELL NAME	LOCATION	EPA PERMIT NO.
Ute Tribal #1-8	NW/4 of NW/4 Section 8	UT2736-04201
Ute Tribal #5-8	SE/4 of NW/4 Section 8	UT2736-04203
Ute Tribal #4-18	NW/4 of NE/4 Section 18	UT2736-04202
Ute Tribal #5-18	NE/4 of SE/4 Section 18	UT2736-04204

"Injection activities shall not commence until the operator has fulfilled all applicable conditions of this permit and has received written authorization from the Director."

Is Modified to read:

"Injection will be for the purpose of enhanced oil recovery ... and initially utilizing the following currently existing production wells located in T5S-R3W:"

WELL NAME	LOCATION	EPA PERMIT NO.
Ute Tribal #1-8	NW/4 of NW/4 Section 8	UT2736-04201
Ute Tribal #5-8	SE/4 of NW/4 Section 8	UT2736-04203
Ute Tribal #4-18	NW/4 of NE/4 Section 18	UT2736-04202
Ute Tribal #5-18	NE/4 of SE/4 Section 18	UT2736-04204

and the four (4) additional production wells located within the **expanded and newly defined permitted Area:"**

WELL NAME	LOCATION	EPA PERMIT NO.
Ute Tribal #33-14D3	SE/SW Section 33	UT2736-04420
Ute Tribal #33-10D3	NW/SE Section 33	UT2736-04421
Ute Tribal #33-08D3	SE/NE Section 33	UT2736-04422
Ute Tribal #33-16D3	SE/SE Section 33	UT2736-04423

"Injection activities shall not commence until the operator has fulfilled all applicable conditions of this permit and has received **separate written authorization from the Director.**"

Additional wells may be added as long as the permittee meets the provisions of the Area permit and according to the terms under CFR 40 § 144.33 (c).

MODIFICATION #4 [PART II. B.] - (Original Permit version):

"The operator is not required to take any corrective action on any of the forty-nine (49) production well or the five (5) plugged and abandoned wells within the area of review (AOR), before the effective date of the permit. The manner in which the wells are cased and cemented will prevent any migration of fluids from the injection zones into underground sources of drinking water (USDWs) in the Uinta Formation."

Is Modified to read:

"The operator is not required to take any corrective action on any of the original forty-nine (49) production wells or the five (5) plugged and abandoned (P&A'd) wells found within the AOR of the initial area permit.

"The operator is not required to take corrective action on any of the **thirty (30) wells within the expanded 1/4-mile Area of Review (AOR) before the effective date of this Modified Area Permit**; of the thirty (30) wells, three (3) are T/A'd, nine (9) are P/A'd, fourteen (14) are producing oil wells, one (1) shut-in oil well, one (1) EPA permitted Class II water injection well, one (1) waiting on completion, and one (1) WDC well. These wells have been reviewed and were determined to have been satisfactorily constructed or plugged and abandoned to prevent any migration of fluids from the injection zones into underground sources of drinking water (USDWs) in the Uinta Formation."

MODIFICATION #5 [PART II. C.1.] - (Original Permit version):

"C. WELL OPERATION

1. Prior to Commencing Injection (Initial Wells). Individual enhanced recovery operations for the four (4) existing production wells (Ute Tribal #1-8,, #5-8, #4-18 and #5-18) may not commence until the permittee has compiled with both (a) and (b), as follows:"

Is Modified to read:

"C. WELL OPERATION

1. Prior to Commencing Injection (Initial Wells). Individual enhanced recovery operations for the four (4) existing production wells, (Ute Tribal #1-8, #5-8, #4-18, and #5-18), and the four (4) additional production wells within the expanded and newly defined permitted Area, **(Ute Tribal #33-14D3, #33-10D3, #33-08D3 and #33-16D3)** may not commence until the permittee has compiled with both (a) and (b), as follows:"

MODIFICATION #6 [PART II. D.] - (Original Permit version):

"1. Injection well Monitoring Program. Samples and measurements shall be representative ...

(a) Analysis of the disposed fluids ..."

(ii) whenever there is a change in the source of disposed fluids ... "

Is Modified to read:

"1. Injection well Monitoring Program. Samples and measurements shall be representative ...

(a) Analysis of the **enhanced recovery injection** fluids ..."

(ii) whenever there is a change in the source of **enhanced recovery injection** fluids ..."

MODIFICATION #7 [PART III. A. & B.] - (Original Permit version):

"A. EFFECT OF PERMIT

The permittee is allowed to engage in underground disposal in accordance with the conditions of this permit. The permittee, as authorized by this permit, shall not construct, operate, maintain, convert, plug, abandon, or conduct any other disposal activity ... Any underground disposal activity not authorized ... "

"B. PERMIT ACTIONS

2. Conversions. The Director may, for cause or upon a request from the permittee, allow conversion of the well from a Class II salt water disposal well to a non-Class II well. Requests to convert the disposal well from its Class II status to a non-Class II well, such as a production well must be made in writing to the Director. ... "

Is Modified to read:

"A. EFFECT OF PERMIT

The permittee is allowed to engage in underground **enhanced recovery injection** in accordance with the conditions of this permit. The permittee, as authorized by this permit, shall not construct, operate, maintain, convert, plug, abandon, or conduct any other **injection** activity ... Any underground **injection** activity not authorized ... "

"B. PERMIT ACTIONS

2. Conversions. The Director may, for cause or upon a request from the permittee, allow conversion of the well from a Class II **enhanced recovery injection** well to a non-Class II well. Requests to convert

the injection well from its Class II status to a non-Class II well, such as a production well must be made in writing to the Director. ... "

All other provisions and conditions of the permit remain as originally issued.

4-30-98
Date

for Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

APPENDIX A

I. WELL CONSTRUCTION SCHEMATICS

Ute Tribal #33-08D3-Wellbore Diagram
After Conversion

Well History:

11/23/97 Spud Well
12/27/97 First Production

12/11/97 H02 Perf's, 6428 to 6432', 4 spf.
Broke down with acid and treated water.
Fraced with 300 bbls. x-linked gel water and
28,300 lbs. total sand. ISIP 2684 psi.

12/11/97 E01 Perf's, 5826 to 5832', 4 spf.
Broke down with acid and treated water.
Fraced with 318 bbls. x-linked gel water and
42,200 lbs. total sand. ISIP 2200 psi.

12/12/97 D7.2 Perf's, 5582 to 5610', 4 spf.
Broke down with acid and treated water.
Fraced with 810 bbl. x-linked gel water and
170,700 lbs. total sand. ISIP 2817 psi, 5 min. 2813.

12/15/97 D3.4 Perf's, 5324 to 5354', 4 spf. also,
D3.3 Perf's, 5311 to 5314', 4 spf.
Broke down with acid and treated water.
Fraced with 771 bbls. x-linked gel water and
151,800 lbs. total sand. ISIP 2113 psi.

12/15/97 C6.1 Perf's, 501 to 5006', 4 spf.
Broke down with acid and treated water.
Fraced with 323 bbls. x-linked gel water and
50,800 lbs. total sand. ISIP 1983' psi, 5 min 1888'.

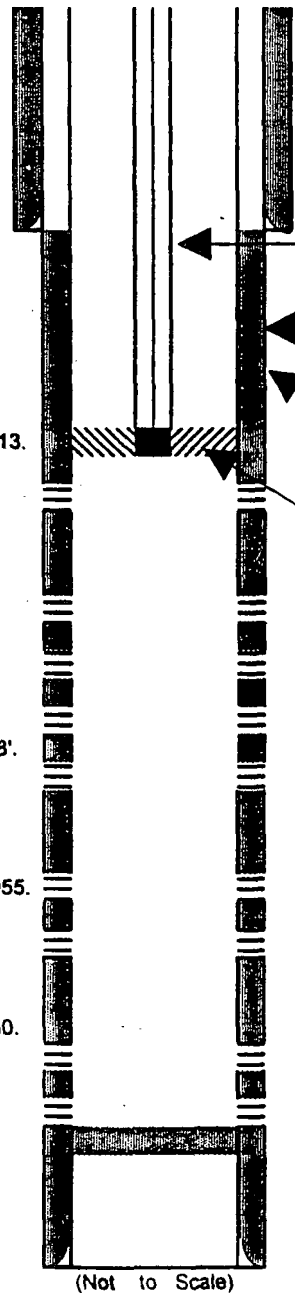
12/18/97 C5.2 Perf's, 4902 to 4906', 4 spf.
Broke down with acid and treated water.
Fraced with 245 bbls. x-linked gel water and
310,000 lbs. total sand. ISIP 2450' psi, 5 min. 1955.

12/18/97 B10 Perf's, 4559 to 4563', 4 spf.
Broke down with acid and treated water.
Fraced with 297 bbls. x-linked gel water and
43,000 lbs. total sand. ISIP 2659' psi, 5 min. 2560.

B8 Perf's, 4486 to 4496', 4 spf.
Broke down with acid and treated water.
Fraced with 3000 gal. x-linked gel water and
13,000 lbs. total sand.

12/18/97 B6.3 Perf's, 4441 to 4445', 4 spf.
Broke down with acid and treated water.
Fraced with 244 bbls. x-linked gel water and
27,000 lbs. total sand. ISIP 3418' psi, 5 min. 3100.

12/18/97 B6.2 Perf's, 4343 to 4347', 4 spf.
Broke down with acid and treated water.
Fraced with 217 bbls. x-linked gel water and
27,600 lbs. total sand. ISIP 2100' psi, 5 min. 1980.



(Not to Scale)

GL: 5787
KB: 5797

8 5/8" 24# J55 Surface csg
@ 505' KB with 280 sxs.

Surface hole size : 12 ¼"

Tubing @ 139 Jts. of 2 7/8"
6.5# J-55 @ 4310' KB

Hole size: 7 7/8" bit

Cement top @ 505' KB
5 ½" 15.5 J55 csg @ 6531'
KB cmt'd with 630 sxs

Casing Packer @ 4310' KB

Perf's:

H02	6428 to 6432'
E01	5826 to 5832'
D7.2	5582 to 5610'
D3.4	5324 to 5354'
D3.3	5311 to 5314'
C6.1	5001 to 5006'
C5.2	4902 to 4906'
B10	4559 to 4563'
B8	4486 to 4496'
B6.3	4441 to 4445'
B6.2	4343 to 4347'

PBTD: 6470' KB
TD: 6570' KB

Petroglyph Operating Co., Inc.
Ute Tribal #33-08D3 (1848' FNL & 762' FEL) SE NE Section 33 - 4S - 3W Antelope Creek Field Duchesne Co. Utah
API #43-013-31956 ; LEASE #14-20-H62-4736

Ute Tribal #33-10D3-Wellbore Diagram
After Conversion

Well History:

10/31/97 Spud Well
12/16/97 First Production

12/5/97 H02 Perf's, 6400 to 6403', 4 spf.
H01 Perf's, 6372 to 6378', 4 spf.
Broke down with acid and treated water.
Fraced with 9,400 gal. x-linked gel
water and 50,900 lbs. total sand.
ISIP 3278 psi. 15 min 2226 psi.

THE FOLLOWING ZONES WILL
BE COMPLETED AT A LATER DATE

D7.21 Perf's, 5604 to 5611', 4 spf.
Broke down with acid and treated water.
Fraced with 420 bbl. x-linked gel water and
68,000 lbs. total sand.

D7.2 Perf's, 5538 to 5550', 4 spf.
Broke down with acid and treated water.
Fraced with 560 bbl. x-linked gel water and
102,000 lbs. total sand.

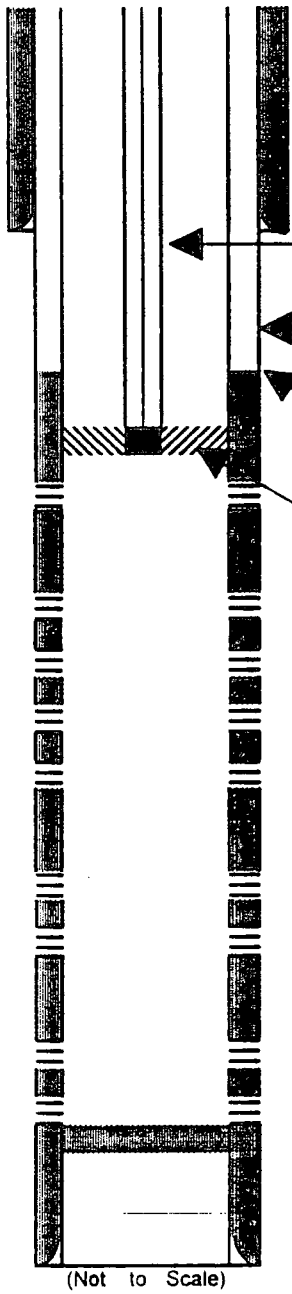
D3.4 Perf's, 5306 to 5312', 4 spf.
Broke down with acid and treated water.
Fraced with 280 bbl. x-linked gel water and
56,000 lbs. total sand.

D3.2 Perf's, 5258 to 5262', 4 spf.
Broke down with acid and treated water.
Fraced with 191 bbl. x-linked gel water and
28,000 lbs. total sand.

C6.1 Perf's, 4986 to 4990
Broke down with acid and treated water.
Fraced with 191 bbl. x-linked gel water and
28,000 lbs. total sand.

B10 Perf's, 4534 to 4539', 4 spf.
Broke down with acid and treated water.
Fraced with 191 bbl. x-linked gel water and
28,000 lbs. total sand.

B8 Perf's, 4476 to 4480', 4 spf.
Broke down with acid and treated water.
Fraced with 130 bbl. x-linked gel water and
13,000 lbs. total sand.



GL: 5822
KB: 5832

8 5/8" 24# J55 Surface csg
@ 461' KB with 350 sxs.

Surface hole size : 12 ¼"

Tubing @ 145 Jts. of 2 7/8"
6.5# J-55 @ 4510' KB

Hole size: 7 7/8" bit

Cement top @ 925'KB
5 ½" 15.5 J55 csg @ 6509'
KB cmt'd with 550 sxs

Casing Packer @ 4450' KB

Perf's:

H02	6400 to 6403'
H01	6372 to 6378'
D7.21	5604 to 5611'
D7.2	5538 to 5550'
D3.4	5306 to 5312
D3.2	5258 to 5262'
C6.1	4986 to 4990'
B10	4534 to 4539'
B8	4476 to 4480'

PBTD: 6448' KB
TD: 6531' KB

(Not to Scale)

Petroglyph Operating Co., Inc.
Ute Tribal #33-10D3 (1979' FSL & 1980' FEL) NW SE Section 33 - 4S - 3W Antelope Creek Field Duchesne Co. Utah
API #43-013-31935 ; LEASE #14-20-H62-4736

Ute Tribal #33-14D3-Wellbore Diagram
After Conversion

Well History:
10/13/97 Spud Well
12/14/97 First Production

11/5/97 H2 Perf's, 6355 to 6358', 4 spf. also, H1 Perf's, 6313 to 6317', 4 spf. Broke down with acid and treated water. Fraced with 360 bbls. x-linked gel water and 41,800 lbs. total sand. Screened out.

11/12/97 D7.2 Perf's, 5514 to 5526', 4 spf. Broke down with acid and treated water. Fraced with 441 bbls. x-linked gel water & gal. x-linked gel water and 87,000 lbs. total sand. ISIP 3666 psi, 5min. 3200.

11/18/97 D7.11 Perf's, 5465 to 5473', 4 spf. also, D7.1 Perf's, 5436 to 5440', 4 spf. Broke down with acid and treated water. Fraced with 347 bbls. x-linked gel water & 55,800lbs. total sand. Screened out.

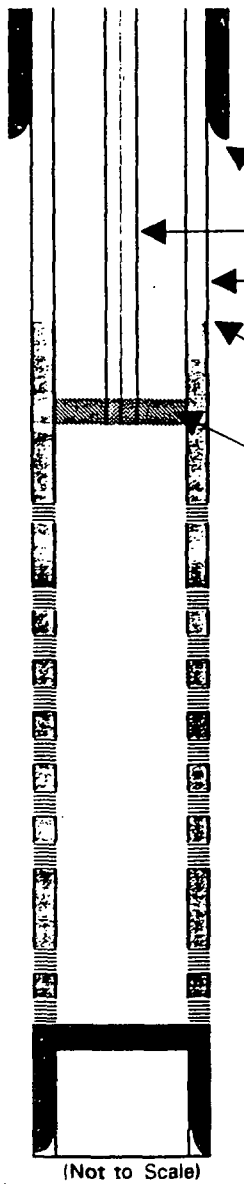
11/24/97 D3.3 Perf's, 5252 to 5255,' 4 spf Broke down with acid and treated water. Fraced with 191 bbls. x-linked gel water & gal. x-linked gel water and 16,000 lbs. total sand. Screened out.

12/2/97 C5.2 Perf's, 4953 to 4957', 4 spf. Broke down with acid and treated water. Fraced with 184 bbls. x-linked gel water and 10,000 lbs. total sand. Screened out.

12/3/97 C4.2 Perf's, 4812 to 4816', 4 spf. Broke down with acid and treated water. Fraced with 9288 gal. x-linked gel water and 35,000 lbs. total sand.

12/4/97 B10 Perf's, 4530 to 4536', 4 spf. Broke down with acid and treated water. Fraced with 314 bbls. x-linked gel water and 47,000 lbs. total sand. Screened out.

12/4/97 B6.3 Perf's, 4343 to 4349', 4 spf. also, B6.2 Perf's, 4330 to 4336', 4 spf. Broke down with acid and treated water. Fraced with 14,444 gal. x-linked gel water and 78,400 lbs. total sand.



(Not to Scale)

GL: 5889
KB: 5899

8 5/8" 24# Surface CSG @ 443' KB cmt'd w/400 sxs

Surface Hole size 12 1/4"

Tubing: 45 jts of 2 7/8" @ 4510' KB

Hole Size 7 7/8" bit

Cement top @ 580' KB
5 1/2" 15.5# J-55 CSG @ 6453' cmt'd w/585 sxs.

Casing Packer @ 4300'

Perf's:

B6.2	4330 to 4336'
B6.3	4343 to 4349'
B10	4530 to 4536'
C4.2	4812 to 4816'
C5.2	4953 to 4957'
D3.3	5252 to 5255'
D7.1	5436 to 5440'
D7.11	5465 to 5473'
D7.2	5514 to 5526'
H1	6313 to 6317'
H2	6355 to 6358'

PBTD @ 6365'
TD @ 6494' KB

Petroglyph Operating Co., Inc.

Ute Tribal #33-14D3

(660' FSL & 1780' FWL)

SE SW Section 33 - 4S - 3W

Antelope Creek Field
Duchesne Co. Utah
API #43-013-31936 ; LEASE #14-20-H62-4736

Ute Tribal #33-16D3-Wellbore Diagram
After Conversion

Well History:

11/15/97 Spud Well
12/23/97 First Production

12/5/97 H02 Perf's, 6418 to 6422', 4 spf.
Broke down with acid and treated water.
Fraced with 5,767 gal. x-linked gel water
and 29,000 lbs. total sand. ISIP 2715 psi.

12/5/97 D7.2 Perf's, 5660 to 5664', 4 spf.
Broke down with acid and treated water.
Fraced with 5,969 gal. x-linked gel water
and 27,400 lbs. total sand. ISIP 2829 psi.

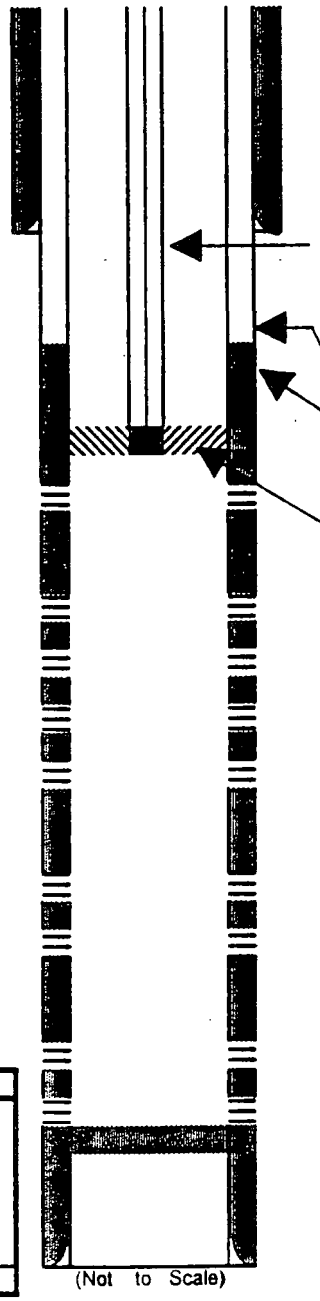
12/10/97 D7.2 Perf's, 5620 to 5566', 4 spf.
Broke down with acid and treated water.
Fraced with 915 bbls. x-linked gel water
and 176,600 lbs. total sand. ISIP 2357 psi.

12/15/97 D7.1 Perf's, 5472 to 5542', 4 spf.
Broke down with acid and treated water.
Fraced with 648 bbls. x-linked gel water
and 117,000 lbs. total sand. ISIP 2113 psi.

12/19/97 D3.2 Perf's, 5284 to 5298', 4 spf.
Broke down with acid and treated water.
Fraced with 794 bbls. x-linked gel water
and 157,000 lbs. total sand. ISIP 2370 psi.

12/20/97 C5.2 Perf's, 4895 to 4898', 4 spf.
Broke down with acid and treated water.
Fraced with 266 bbls. x-linked gel water
and 28,300 lbs. total sand. ISIP 2678 psi.

12/20/97 B11 Perf's, 4592 to 4598', 4 spf.
Broke down with acid and treated water.
Fraced with 298 bbls. x-linked gel water
and 47,000 lbs. total sand. ISIP 2550 psi.



GL: 5868
KB: 5878

8 5/8" 24# J55 Surface csg
@ 430' KB with 250 sxs.

Surface hole size : 12 ¼"

Tubing @ 147 Jts. of 2 7/8"
6.5# J-55 @ 4550' KB

Hole size: 7 7/8" bit

Cement top @ 1810' KB
5 ½" 15.5 J55 csg @ 6500'
KB cmt'd with 475 sxs

Casing Packer @ 4550' KB

Perf's:

H02	6418 to 6422'
D7.2	5660 to 5664'
D7.2	5620 to 5566'
D7.1	5472 to 5542'
D3.2	5284 to 5298'
C5.2	4895 to 4898'
B11	4592 to 4598'

PBTD: 6444' KB
TD: 6500' KB

(Not to Scale)

Petroglyph Operating Co., Inc.
Ute Tribal #33-16D3 (662' FSL & 737' FEL) SE SE Section 33 - 4S - 3W Antelope Creek Field Duchesne Co. Utah
API #43-013-31938 ; LEASE #14-20-H62-4736

APPENDIX C

II. WELL PLUGGING AND ABANDONMENT SCHEMATICS

Ute Tribal # 33-08D3-Wellbore Diagram
Plugged

Well History:

11/23/97 Spud Well
12/27/97 First Production

12/11/97 H02 Perf's, 6428 to 6432', 4 spf.
Broke down with acid and treated water.
Fraced with 300 bbls. x-linked gel water and
28,300 lbs. total sand. ISIP 2684 psi.

12/11/97 E01 Perf's, 5826 to 5832', 4 spf.
Broke down with acid and treated water.
Fraced with 318 bbls. x-linked gel water and
42,200 lbs. total sand. ISIP 2200 psi.

12/12/97 D7.2 Perf's, 5582 to 5610', 4 spf.
Broke down with acid and treated water.
Fraced with 810 bbl. x-linked gel water and
170,700 lbs. total sand. ISIP 2817 psi, 5 min. 2813.

12/15/97 D3.4 Perf's, 5324 to 5354', 4 spf. also,
D3.3 Perf's, 5311 to 5314', 4 spf.
Broke down with acid and treated water.
Fraced with 771 bbls. x-linked gel water and
151,800 lbs. total sand. ISIP 2113 psi.

12/15/97 C6.1 Perf's, 501 to 5006', 4 spf.
Broke down with acid and treated water.
Fraced with 323 bbls. x-linked gel water and
50,800 lbs. total sand. ISIP 1983' psi, 5 min 1888'.

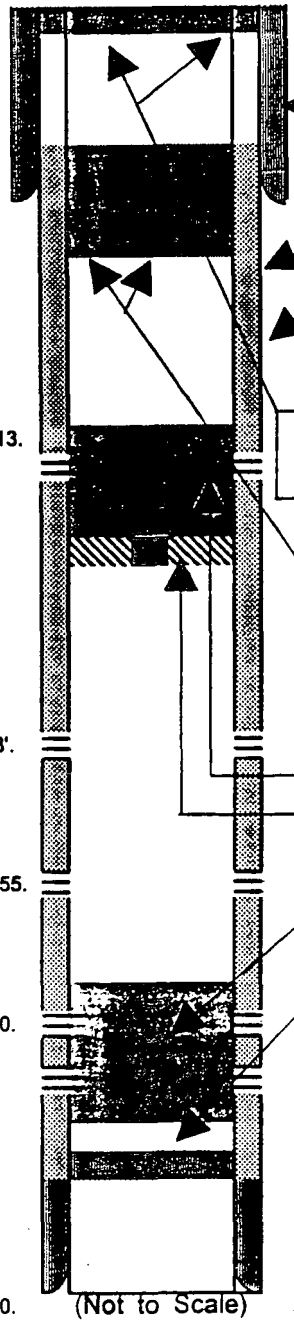
12/18/97 C5.2 Perf's, 4902 to 4906', 4 spf.
Broke down with acid and treated water.
Fraced with 245 bbls. x-linked gel water and
310,000 lbs. total sand. ISIP 2450' psi, 5 min. 1955.

12/18/97 B10 Perf's, 4559 to 4563', 4 spf.
Broke down with acid and treated water.
Fraced with 297 bbls. x-linked gel water and
43,000 lbs. total sand. ISIP 2659' psi, 5 min. 2560.

B8 Perf's, 4486 to 4496', 4 spf.
Broke down with acid and treated water.
Fraced with 3,000 gal. x-linked gel water and
13,000 lbs. total sand.

12/18/97 B6.3 Perf's, 4441 to 4445', 4 spf.
Broke down with acid and treated water.
Fraced with 244 bbls. x-linked gel water and
27,000 lbs. total sand. ISIP 3418' psi, 5 min. 3100.

12/18/97 B6.2 Perf's, 4343 to 4347', 4 spf.
Broke down with acid and treated water.
Fraced with 217 bbls. x-linked gel water and
27,600 lbs. total sand. ISIP 2100' psi, 5 min. 1980.



(Not to Scale)

GL: 5787
KB: 5797

Surface Hole Size 12 1/4"

8 5/8" 24# J55 Surface csg
@ 505' KB with 280 sxs.

Hole Size 7 7/8" bit

Cement top @ 505' KB
5 ½" 15.5 J55 csg @ 6531'
KB cmt'd with 630 sxs

One inch between surface pip and production casing brining cement from 50' to surface.
Fill the 5 ½" production casing from 50' to surface with 7 sxs Class "G" cement.

Perforate the 5 ½" casing with 4 shots at 505' and squeeze with 20 sxs Class "G" cement from 505' to 405'.
(50' above 8 5/8" casing shoe.)
Spot 15 sxs Class "G" cement inside the 5 ½" casing from 555' back to 455'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud. Spot 30 sxs Class "G" cement from 4400 to 4200' on top of CIBP @ 4400'.

Spot 30 sxs Class "G" cement from 5200 to 5000'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud.

Perf's:

H02	6428 to 6432'
E01	5826 to 5832'
D7.2	5582 to 5610'
D3.4	5324 to 5354'
D3.3	5311 to 5314'
C6.1	5001 to 5006'
C5.2	4902 to 4906'
B10	4559 to 4563'
B8	4486 to 4496'
B6.3	4441 to 4445'
B6.2	4343 to 4347'

PBTD: 6470' KB
TD: 6570' KB

Petroglyph Operating Co., Inc.

Ute Tribal #33-08D3
(1848' FNL & 762' FEL)
SE NE Section 33 - 4S - 3W
Antelope Creek Field
Duchesne Co. Utah

API #43-013-31956 ; LEASE #14-20-H62-4736

Ute Tribal # 33-10D3-Wellbore Diagram
Plugged

Well History:

10/31/97 Spud Well

12/16/97 First Production

12/5/97 H02 Perf's, 6400 to 6403', 4 spf.
H01 Perf's, 6372 to 6378', 4 spf.
Broke down with acid and treated water.
Fraced with 9,400 gal. x-linked gel water and 50,900 lbs. total sand.
ISIP 3278 psi. 15 min 2226 psi.

THE FOLLOWING ZONES WILL BE COMPLETED AT A LATER DATE

D7.21 Perf's, 5604 to 5611', 4 spf.
Broke down with acid and treated water.
Fraced with 420 bbl. x-linked gel water and 68,000 lbs. total sand.

D7.2 Perf's, 5538 to 5550', 4 spf.
Broke down with acid and treated water.
Fraced with 560 bbl. x-linked gel water and 102,000 lbs. total sand.

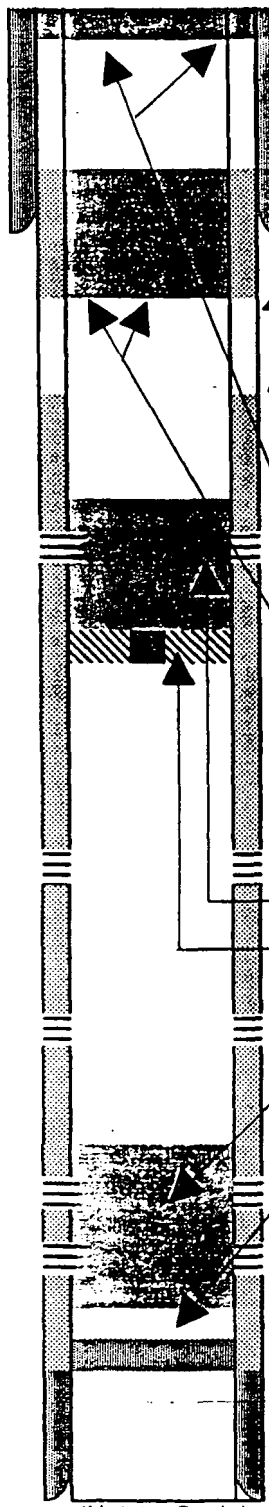
D3.4 Perf's, 5306 to 5312', 4 spf.
Broke down with acid and treated water.
Fraced with 280 bbl. x-linked gel water and 56,000 lbs. total sand.

D3.2 Perf's, 5258 to 5262', 4 spf.
Broke down with acid and treated water.
Fraced with 191 bbl. x-linked gel water and 28,000 lbs. total sand.

C6.1 Perf's, 4986 to 4990
Broke down with acid and treated water.
Fraced with 191 bbl. x-linked gel water and 28,000 lbs. total sand.

B10 Perf's, 4534 to 4539', 4 spf.
Broke down with acid and treated water.
Fraced with 191 bbl. x-linked gel water and 28,000 lbs. total sand.

B8 Perf's, 4476 to 4480', 4 spf.
Broke down with acid and treated water.
Fraced with 130 bbl. x-linked gel water and 13,000 lbs. total sand.



(Not to Scale)

GL: 5822
KB: 5832

Surface Hole Size 12 1/4"

8 5/8" 24# J55 Surface csg @ 461' KB with 350 sxs.

Hole Size 7 7/8" bit

Cement top @ 925'KB
5 ½" 15.5 J55 csg @ 6509'
KB cmt'd with 550 sxs

One inch between surface pip and production casing brining cement from 50' to surface.

Fill the 5 ½" production casing from 50' to surface with 7 sxs Class "G" cement.

Perforate the 5 ½" casing with 4 shots at 511' and squeeze with 20 sxs Class "G" cement from 511' to 411'. (50' below & 50' above 8 5/8" casing shoe.)
Spot 15 sxs Class "G" cement inside the 5 ½" casing from 511' back to 411'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud. Spot 30 sxs Class "G" cement from 4350 to 4550' on top of CIBP @ 4550'.

Spot 30 sxs Class "G" cement from 5200 to 5000'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud.

Perf's:

H02	6400 to 6403'
H01	6372 to 6378'
D7.21	5604 to 5611'
D7.2	5538 to 5550'
D3.4	5306 to 5312
D3.2	5258 to 5262'
C6.1	4986 to 4990'
B10	4534 to 4539'
B8	4476 to 4480'

PBTD: 6448' KB
TD: 6531' KB

Petroglyph Operating Co., Inc.
Ute Tribal #33-10D3 (1979' FSL & 1980' FEL) NW SE Section 33 - 4S - 3W Antelope Creek Field Duchesne Co. Utah
API #43-013-31935 ; LEASE #14-20-H62-4736

Ute Tribal #33-14D3-Wellbore Diagram
Plug and Abandonment

Well History:
10/13/97 Spud Well
12/14/97 First Production

11/5/97 H2 Perf's, 6355 to 6358', 4 spf. also, H1 Perf's, 6313 to 6317', 4 spf. Broke down with acid and treated water. Fraced with 360 bbls. x-linked gel water and 41,800 lbs. total sand. Screened out.

11/12/97 D7.2 Perf's, 5514 to 5526', 4 spf. Broke down with acid and treated water. Fraced with 441 bbls. x-linked gel water & gal. x-linked gel water and 87,000 lbs. total sand. ISIP 3666 psi, 5min. 3200.

11/18/97 D7.11 Perf's, 5465 to 5473', 4 spf. also, D7.1 Perf's, 5436 to 5440', 4 spf. Broke down with acid and treated water. Fraced with 347 bbls. x-linked gel water & 55,800lbs. total sand. Screened out.

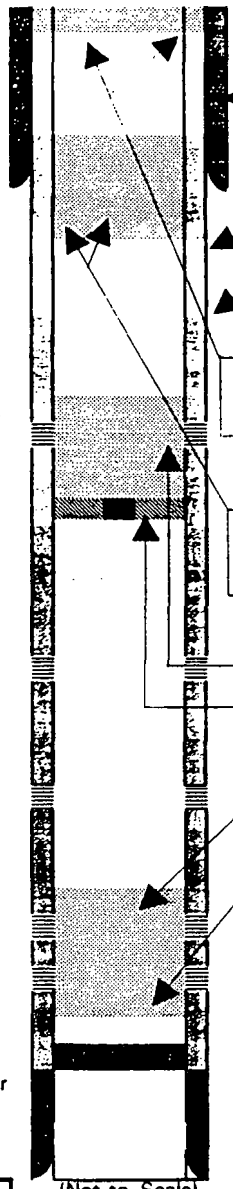
11/24/97 D3.3 Perf's, 5252 to 5255,' 4 spf Broke down with acid and treated water. Fraced with 191 bbls. x-linked gel water & gal. x-linked gel water and 16,000 lbs. total sand. Screened out.

12/2/97 C5.2 Perf's, 4953 to 4957', 4 spf. Broke down with acid and treated water. Fraced with 184 bbls. x-linked gel water and 10,000 lbs. total sand. Screened out.

12/3/97 C4.2 Perf's, 4812 to 4816', 4 spf. Broke down with acid and treated water. Fraced with 9288 gal. x-linked gel water and 35,000 lbs. total sand.

12/4/97 B10 Perf's, 4530 to 4536', 4 spf. Broke down with acid and treated water. Fraced with 314 bbls. x-linked gel water and 47,000 lbs. total sand. Screened out.

12/4/97 B6.3 Perf's, 4343 to 4349', 4 spf. also, B6.2 Perf's, 4330 to 4336', 4 spf. Broke down with acid and treated water. Fraced with 14,444 gal. x-linked gel water and 78,400 lbs. total sand.



(Not to Scale)

GL: 5889
KB: 5899

8 5/8" 24# Surface CSG @ 443' KB cmt'd w/400 sxs

Surface Hole size 12 1/4"

Hole Size 7 7/8" bit

Cement top @ 580' KB 5 1/2" 15.5# J-55 CSG @ 6453' cmt'd w/585 sxs.

One inch between surface pip and production casing brining cement from 50' to surface.

Fill the 5 ½" production casing from 50' to surface with 7 sxs Class "G" cement.

Perforate the 5 ½" casing with 4 shots at 493' and squeeze with 20 sxs Class "G" cement from 493' to 393'. (50' below & 50' above 8 5/8" casing shoe.)

Spot 15 sxs Class "G" cement inside the 5 ½" casing from 493 back to 393'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud. Spot 30 sxs Class "G" cement from 4370 to 4170' on top of CIBP @ 4370'.

Spot 30 sxs Class "G" cement from 5200 to 5000'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud.

Perf's:

B6.2	4330 to 4336'
B6.3	4343 to 4349'
B10	4530 to 4536'
C4.2	4812 to 4816'
C5.2	4953 to 4957'
D3.3	5252 to 5255'
D7.1	5436 to 5440'
D7.11	5465 to 5473'
D7.2	5514 to 5526'
H1	6313 to 6317'
H2	6355 to 6358'

PBTD @ 6365'
TD @ 6494' KB

Petroglyph Operating Co., Inc.

Ute Tribal #33-14D3

(660' FSL & 1780' FWL)

SE SW Section 33 - 4S - 3W

Antelope Creek Field
Duchesne Co. Utah
API #43-013-31936 ; LEASE #14-20-H62-4736

Ute Tribal # 33-16D3-Wellbore Diagram
Plugged and Abandonment

Well History:

11/15/97 Spud Well
12/23/97 First Production

12/5/97 H02 Perf's, 6418 to 6422', 4 spf.
Broke down with acid and treated water.
Fraced with 5,767 gal. x-linked gel water
and 29,000 lbs. total sand. ISIP 2715 psi.

12/5/97 D7.2 Perf's, 5660 to 5664', 4 spf.
Broke down with acid and treated water.
Fraced with 5,969 gal. x-linked gel water
and 27,400 lbs. total sand. ISIP 2829 psi.

12/10/97 D7.2 Perf's, 5620 to 5566', 4 spf.
Broke down with acid and treated water.
Fraced with 915 bbls. x-linked gel water
and 176,600 lbs. total sand. ISIP 2357 psi.

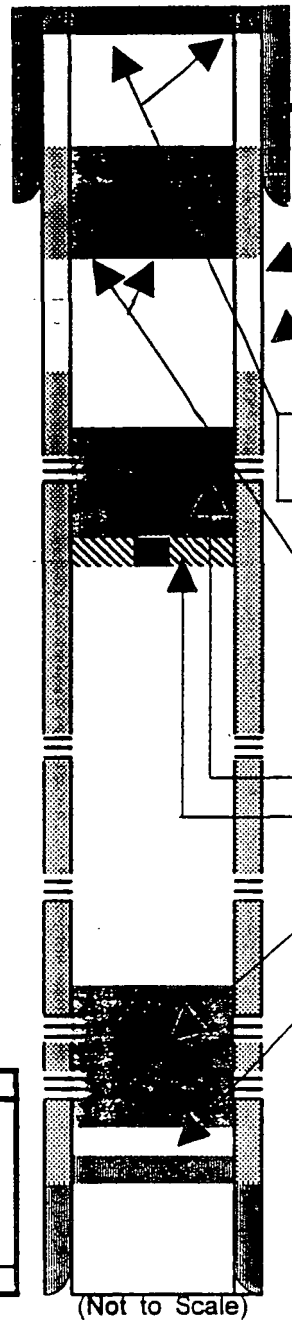
12/15/97 D7.1 Perf's, 5472 to 5542', 4 spf.
Broke down with acid and treated water.
Fraced with 648 bbls. x-linked gel water
and 117,000 lbs. total sand. ISIP 2113 psi.

12/19/97 D3.2 Perf's, 5284 to 5298', 4 spf.
Broke down with acid and treated water.
Fraced with 794 bbls. x-linked gel water
and 157,000 lbs. total sand. ISIP 2370 psi.

12/20/97 C5.2 Perf's, 4895 to 4898', 4 spf.
Broke down with acid and treated water.
Fraced with 266 bbls. x-linked gel water
and 28,300 lbs. total sand. ISIP 2678 psi.

12/20/97 B11 Perf's, 4592 to 4598', 4 spf.
Broke down with acid and treated water.
Fraced with 298 bbls. x-linked gel water
and 47,000 lbs. total sand. ISIP 2550 psi.

Petroglyph Operating Co., Inc.
Ute Tribal #33-16D3 (662' FSL & 737' FEL) SE SE Section 33 - 4S - 3W Antelope Creek Field Duchesne Co. Utah
API #43-013-31938 ; LEASE #14-20-H62-4736



(Not to Scale)

GL: 5868
KB: 5878

Surface Hole Size 12 1/4"

8 5/8" 24# J55 Surface csg
@ 430' KB with 250 sxs.

Hole Size 7 7/8" bit

Cement top @ 1810' KB
5 ½" 15.5 J55 csg @ 6500'
KB cmt'd with 475 sxs

One inch between surface pip and production casing brining cement from 50' to surface.
Fill the 5 ½" production casing from 50' to surface with 7 sxs Class "G" cement.

Perforate the 5 ½" casing with 4 shots at 480' and squeeze with 20 sxs Class "G" cement from 480' to 380'.
(50' above 8 5/8" casing shoe.)
Spot 15 sxs Class "G" cement inside the 5 ½" casing from 480' back to 380'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud. Spot 30 sxs Class "G" cement from 4650 to 4450' on top of CIBP @ 4650'.

Spot 30 sxs Class "G" cement from 5200 to 5000'.

Displace 5 ½" casing with 9.2 ppg plugging gel or bentonite mud.

Perf's:

H02	6418 to 6422'
D7.2	5660 to 5664'
D7.2	5620 to 5566'
D7.1	5472 to 5542'
D3.2	5284 to 5298'
C5.2	4895 to 4898'
B11	4592 to 4598'

PBTD: 6444' KB
TD: 6500' KB

Major Permit Modification
EPA Permit No. UT2736-00000
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